

**SOUTH CAROLINA DEPARTMENT OF  
NATURAL RESOURCES**

**SMALL GAME PROJECT  
2010 FOX SQUIRREL SIGHTING SURVEY SUMMARY**

**INTRODUCTION**

Due to concern about the population status of the fox squirrel (*Sciurus niger*) across the Southeast, a fox squirrel sighting survey was initiated in South Carolina in 1989 to document distribution, habitat preference and relative abundance for this species. Fox squirrels prefer habitat consisting of mixed stands of longleaf, loblolly and shortleaf pine, hardwoods and bottomlands. They use tree cavities and leaf nests both as escape and for rearing young. Fox squirrels also use cavities in a variety of tree species especially in the winter and spring. The widespread loss of preferred habitat is detrimental to fox squirrels throughout the southeast. Practices such as large-scale monoculture replacement of longleaf pine by loblolly pine, shortened stand rotation, loss of hardwoods and fire suppression have contributed to habitat loss. Changes in agribusiness and increased urban sprawl have also replaced suitable fox squirrel habitat.

The fox squirrel sighting survey has been conducted in even-numbered years since 1994. This report details information from the 2010 survey.

**METHODS AND MATERIALS**

Data cards for recording information were distributed to Wildlife Section personnel of the South Carolina Department of Natural Resources (DNR) and cooperators from the U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), the South Carolina Forestry Commission (SCFC) and other potential cooperators. From January 1 through December 31, 2010, participants were asked to record date, county, location, color phase and associated habitat type each time a fox squirrel was sighted. Participants were asked to report sightings during the course of their normal work activities and not to drive purposefully through areas of known fox squirrel concentrations.

Habitat types were delineated as follows: pine plantation <15 years old (PPy), pulpwood sized pine plantation (PPp), sawtimber sized pine plantation (PPs), mixed pine-hardwood <30 years old (PHy), mixed pine-hardwood 30-50 years old (BHy), bottomland hardwood >50 (BHo), upland hardwood 30-50 years old (UHy), upland hardwood >50 (UHo), and agricultural or other open field (FD). Due to an ongoing fox squirrel restoration project at Botany Bay Plantation WMA in Charleston County, an additional category (BB) was added for fox squirrels observed on that property.

**RESULTS AND DISCUSSION**

A total of 631 (increase of 26 from 2008) individual fox squirrel sightings were recorded in 23 counties (decrease of 5 counties from 2008) across South Carolina during the 2010 calendar year.

Fox squirrel sightings were higher during the first six months with the most sightings occurring in May (133) followed by April (108), March (90), June (80), February (76) and January (48) respectively. Fox squirrel sightings showed a noticeable decline during the months of July, August and September (Figure 1).

The 2010 survey, like previous surveys, indicates that fox squirrels are more prevalent in areas where suitable mature pine and mixed pine-hardwood habitats (30-50 years old) occur. However, fox squirrels were also observed in all other habitat types including open fields and mixed pine/hardwood stands less than 30 years old (Figure 2).

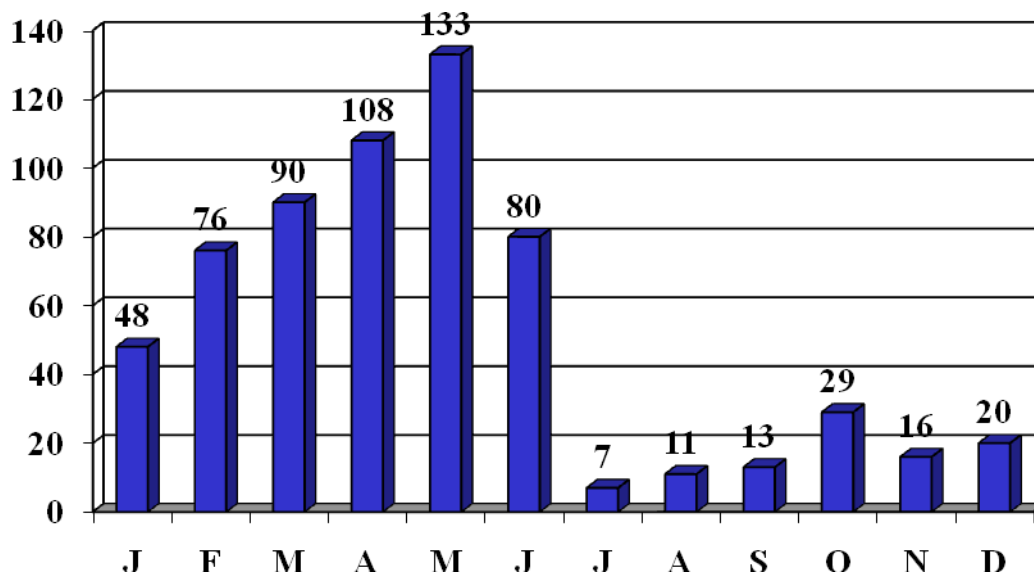
Counties with the most sightings often contain large areas of one or both of these habitat types. Fort Jackson Army Base, Richland County, includes a large mature longleaf pine area. Hobcaw Barony, Georgetown County, consists of several hundred acres of longleaf and mixed pine-hardwood forests. Chesterfield County is home to Sand Hills State Forest and Carolina Sand Hills National Wildlife Refuge, two large expanses of mature longleaf pine habitat. Colleton County is home to Donnelley Wildlife Management Area and several large low country plantations.

Richland County had the highest number of sightings with 117, followed by Chesterfield (109), Georgetown (81), Aiken (55), and Colleton (53) respectively (Table 1). In this survey, fox squirrels were most often associated with sawtimber size pine stands (PPs), mixed pine-hardwood <30 years old (PHy), agricultural or other open fields (FD), mixed pine-hardwood stands 30-50 years old (PHm), and mixed pine-hardwood stand >50 years old (PHo) (Fig 2). Gray (456) was the dominant color phase observed followed by black (157) and brown (18), respectively (Fig. 3).

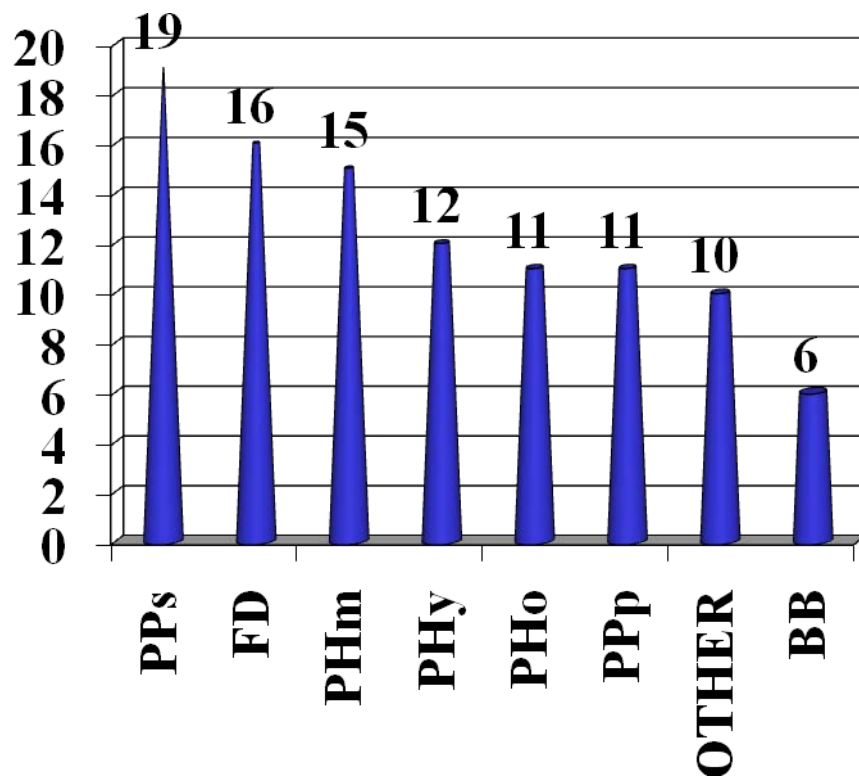
Before estimates of relative abundance can be determined, survey methodology will have to be adjusted in order to quantify effort expended by cooperators during the survey. Other confounding variables, including weather, suitable habitat available for fox squirrels and observer numbers and visibility will have to also be controlled. Combinations of these factors may be responsible for skewing results in any given area of the state.

## **CONCLUSIONS AND RECOMMENDATIONS**

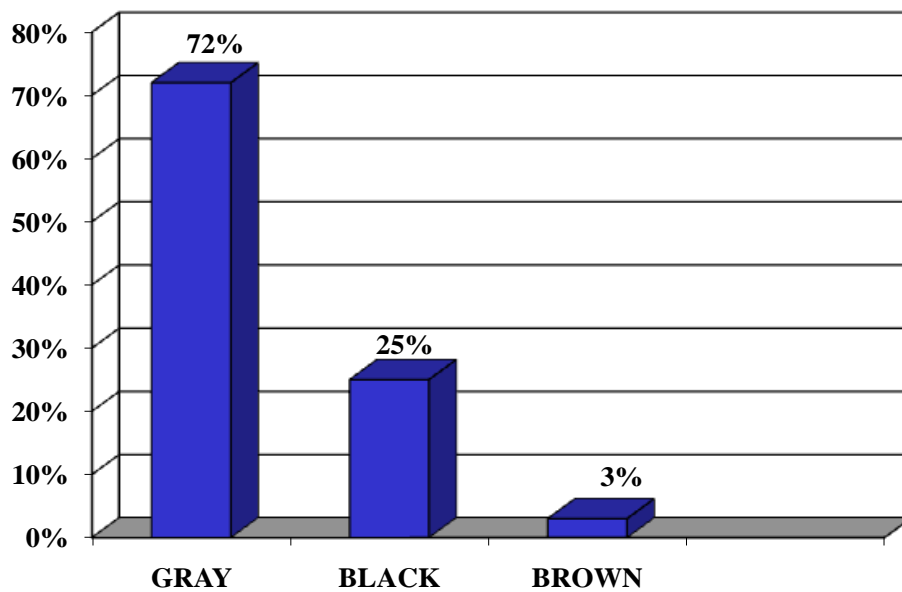
In South Carolina, fox squirrels seem to be prevalent where suitable habitat occurs. They have a state rank of S4, apparently secure, and a global rank of G5, secure (NatureServe 2004). It is recommended that this survey be reviewed and a decision made to continue.



**Figure 1.** Fox Squirrel Sightings by Month, SCDNR, Small Game Project, Fox Squirrel Sighting Survey, 2010.



**Figure 2.** Fox Squirrel Sightings (%) by Habitat Type, South Carolina DNR Fox Squirrel Sighting Survey, 2010.



**Figure 3.** Color Phase, SCDNR Small Game Project, South Carolina DNR Fox Squirrel Sighting Survey, 2010

**Table 1.** Number of Fox Squirrel Sightings by County, South Carolina DNR Fox Squirrel Sighting Survey, 2010.

Abbeville	0	Greenwood	0
Aiken	55	Hampton	30
Allendale	2	Horry	8
Anderson	0	Jasper	0
Bamberg	10	Kershaw	1
Barnwell	1	Lancaster	0
Beaufort	2	Laurens	0
Berkeley	33	Lee	0
Calhoun	15	Lexington	11
Charleston	37	Marion	0
Cherokee	0	Marlboro	0
Chester	0	McCormick	33
Chesterfield	109	Newberry	0
Clarendon	3	Oconee	0
Colleton	53	Orangeburg	13
Darlington	0	Pickens	0
Dillon	0	Richland	117
Dorchester	4	Saluda	0
Edgefield	0	Spartanburg	0
Fairfield	0	Sumter	4
Florence	1	Union	0
Georgetown	81	Williamsburg	8
Greenville	0	York	0